



United States
Department of
Agriculture

Forest
Service

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R.E.S.

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Reply To: 3410

Date: AUG 26 1987

Subject: Aphid Damage to Noble and Pacific Silver Firs

To: District Ranger, White River Ranger District
THRU: Forest Supervisor, Mt. Baker-Snoqualmie NF

Thank you for your 3410 letter of July 30, and the samples of aphid-infested noble fir.

The aphid colony on the sample has been identified as a species of giant conifer aphid, Cinara spp. These aphids limit feeding activities to the bark of branches, stems, and twigs of conifers. They are quite selective as to host preference, and feed exclusively on one tree species or on one genus of trees. They do not have secondary hosts on which part of their life cycle is spent.

Often the first symptom of infestation by the aphid is the observation of large numbers of ants climbing up and down the main stem. Ants are commonly associated with aphid colonies and protect aphids from their natural enemies. They also feed on and remove the sugar-rich honeydew exuded by the aphids as they feed, which can become a sticky trap to the aphids when abundant over the stem. The black fungus on the Pacific silver fir bark sample that was also sent in, is a black sooty mold, and is another symptom of the aphid infestation. It grows on the honeydew exudate from the aphid. The mold will not cause harm to the tree. If populations are very heavy, the needles will also become black and sticky.

Damage caused by Cinara aphids to different hosts have been variously described as discoloration and deformation of needles; premature needle fall; reduction of shoot growth; sticky excretions; and occasionally, tree mortality. Specific damage to noble or Pacific silver fir has not been recorded, although we would expect it to be similar to that described above. Sometimes the ants which tend the aphids can cause damage to the tree by gnawing and wounding bark tissue, especially around the root collar, apparently to improve aphid feeding and increase production of honeydew. In some cases, this girdling is severe enough to kill seedlings. In normal years, aphids are common on trees in a young stand, though seldom do individual trees develop populations large enough to be damaging. At other times, a large number of trees may support heavy populations which could result in the damage described.

In view of the widespread, moderate to heavy populations of aphid and apparently associated needle loss to noble fir and Pacific silver fir in evaluation plantations, we have tentatively scheduled a visit to the District by FPM Entomologist, Roger Sandquist. The dates of September 14





Forest Supervisor, Mt. Baker-Snoqualmie NF

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to 16 have been arranged through the Forest Silviculturist for this visit. We are attempting to schedule a pathologist from our office to accompany Roger on the visit. Roger will be contacting Lee Boeckstiegel to make additional arrangements.

James S. Hadfield

JAMES S. HADFIELD

Acting Director of Forest Pest Management

cc:

L. Boeckstiegel, Mt. Baker-Snoqualmie NF

R. Sandquist, FPM

S. Cooley, FPM

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